



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,483	03/01/2002	Mark N. Robins	10011711-1	3023

7590 09/23/2003

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/087,483	Applicant(s) ROBINS ET AL.	
	Examiner Thoi V Duong	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-13 and 15-25 ~~is/are~~ rejected.
- 7) ☒ Claim(s) 7 and 14 ~~is/are~~ objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 23 and 24 are rejected under 35 U.S.C. 102(a) as being anticipated by Sweatt et al. (Pub. No. US 2002/0105725 A1).

As shown in Figs. 3 and 4, Sweatt et al. discloses a method of focusing light, comprising the steps of:

forming a plurality of light transmissive channels 24 of an electrical-programmable diffraction grating 16 in a light transmissive substrate 28 (Fig. 4); and
varying a pitch of a light transmissive channel so as to vary a corresponding diffraction characteristic (page 6, paragraphs 58-60),

wherein the varying step further comprises activating one or more selectively light opaque elements to form predetermined channel pitches by activating the electrically-programmable diffraction grating 16 to pull down every other pair of grating elements 24 (page 6, paragraph 64).

3. Claims 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Jepsen et al. (USPN 6,172,792 B1).

As shown in Fig. 11, Jepsen et al. discloses a method of focusing light, comprising the steps of:

forming a plurality of light transmissive channels 730, 740, 750 in a light transmissive substrate 720, and insulating sidewall spacers 760; and

varying a pitch of a light transmissive channel by varying the spacing between insulating spacers 760 so as to vary a corresponding diffraction characteristic (to produce a selectable color of light) (col. 11, lines 56-67),

wherein the varying step further comprises activating one or more selectively light opaque elements to form predetermined channel pitches (col. 12, lines 10-20); and

wherein the forming step further comprises forming a plurality of substantially contiguous, spaced-apart LCD elements in said light transmissive substrate as shown in Fig. 3C (col. 3, lines 38-40).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2871

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 8-12, 15-19, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Moseley et al. (USPN 6,124,920) in view of Jepsen et al. (USPN 6,172,792 B1).

As shown in Figs. 24-26, Moseley et al. discloses an image capturing device, comprising:

an aperture (light source 34 and lens 35) that admits light into said image capturing device;

an image capturing element (viewing region); and

a diffractive focusing device SLM 36 interposed between said aperture and said image capturing element, said diffractive focusing device comprising:

a light transmissive substrate 45, and

a plurality of selectively light opaque elements comprising an LCD 38 formed as part of said light transmissive substrate and capable of being electronically activated (col. 4, line 31-34);

wherein particular elements of said plurality of selectively light opaque elements are selectively rendered substantially light opaque or substantially light transmissive in order to create light transmissive channels in said light transmissive substrate (col. 12, lines 4-22),

wherein a selectively light opaque element is substantially linear in shape as shown in Fig. 28b (col. 12, line 59 through col. 13, line 9);

wherein said plurality of selectively light opaque elements comprises a plurality of substantially contiguous, selectively light opaque elements (Fig. 28b);

wherein said plurality of selectively light opaque elements are formed on said light transmissive substrate 45; and

wherein said plurality of selectively light opaque elements are formed within said light transmissive substrate 45.

Moseley et al. discloses an image capturing device that is basically the same as that recited in claims 1-5, 8-12, 15-19, 21 and 22 except for a diffractive characteristic of said diffractive focusing device being varied in response to a pitch of said light transmissive. As shown in Fig. 11, Jepsen et al. discloses a cell structure comprising a substrate 720, variable diffraction grating regions 730, 740, 750, and insulating side wall spacers 760, wherein the spacing between insulating side wall spacers is varied to facilitate the production of different wavelengths of light (see also Figs. 3A and 3B, col. 6, lines 6-34 and col. 11, lines 56-67). As shown in Fig. 3A, since insulating wall 115 is formed as part of a substrate 105 (col. 5, lines 45-55), LCD 130 is flush with an exterior surface of the substrate.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the image capturing device of Moseley et al. with the teaching of Jepsen et al. by employing a diffractive focusing device having a diffractive characteristic being varied in response to a pitch of said light transmissive so as to facilitate the production of different wavelengths of light.

6. Claims 6, 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moseley et al. (USPN 6,124,920) in view of Jepsen et al. (USPN 6,172,792 B1) as applied to claims 1-5, 8-12, 15-19, 21 and 22 and further in view of Oda et al. (USPN 6,476,550 B1).

Moseley et al. discloses an image capturing device that is basically the same as that recited in claims 6, 13 and 20 except for a selectively light opaque element is substantially annular in shape. As shown in Fig. 6, Oda et al. discloses a two-dimensional diffraction grating made by forming an electrode as grooves in a concentric pattern to enhance the light output efficiency (col. 5, line 59 through col. 6, line 6). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the image capturing device of Moseley et al. with the teaching of Oda et al. by forming a selectively light opaque element which is substantially annular in shape so as to enhance the light output efficiency.

Allowable Subject Matter

7. Claims 7 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically, Re claims 7 and 14, none of the prior art of record discloses, in combination with other limitations as claimed, in addition to a diffractive focusing device, a corrective diffractive focusing device comprising a plurality of spaced-apart, selectively light opaque

elements, wherein a spacing between selectively light opaque elements of said corrective diffractive focusing device is controlled to be less than a spacing between selectively light opaque elements of said diffractive focusing device.

The most relevant reference, USPN 6,124,920 of Moseley et al., fails to disclose or suggest a spacing between selectively light opaque elements of said corrective diffractive focusing device. As shown in Fig. 31, the Moseley et al.'s reference only discloses a diffractive focusing device SLM and a corrective diffractive focusing device SLM 72 comprising a plurality of spaced-apart, selectively light opaque elements (col. 13, lines 51-67).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong
09/05/2003

